Orientation on Overview of TB Case Registry Activities

Presented by: Maria G. Rodriguez
TB Surveillance Team Supervisor
512.533.3023
mariag.rodriguez1@dshs.state.tx.us

END TB

What is TB?

- Tuberculosis (TB) is a disease caused by Mycobacterium tuberculosis that adversely affects public health around the world
- TB is spread from person to person through the air and usually affects the lungs, but it can also affect other parts of the body, such as the brain, kidneys, or spine. A person with TB can die if they do not get treatment.
- People with TB disease are sick from TB germs that are active, meaning that they are multiplying and destroying tissue in their body. People with TB disease of the lungs or throat are capable of spreading germs to others. There are prescribed drugs that can treat TB disease.
- People with latent TB infection have TB germs in their bodies, but they are not sick because the germs are not active. These people do not have symptoms of TB disease, and they cannot spread the germs to others. However, they may develop TB disease in the future. They are often prescribed treatment to prevent them from developing TB disease.

TB is now the leading Cause of Death from Infectious Disease in the World

- According to the World Health Organization (WHO), TB surpassed HIV as the leading cause of death from infectious disease in the world in 2014
- The reason is not because more people are getting infected; it is because health officials are able to better track cases to report more accurate numbers
- Better reporting shows TB is worse than officials realized
- Cases were higher among children than previously thought; nearly double the number reported last year; Data show 140,000 children died from TB and 1 million were infected
- WHO estimates overall totals could be even higher, with nearly 40 percent of cases undiagnosed worldwide.

2014 TB Case Counts

- Worldwide, 9.6 million people contracted TB in 2014
- The U.S. reported 9,421 TB cases in 2014
- Texas reported 1,269 TB cases in 2014, second only to California
- For other statistics go to

http://www.dshs.texas.gov/idcu/disease/tb/statistics/

2015 Case Counts

- Texas reported 1,334 TB cases in 2015
- This is a 5.1% increase in number of reported cases counted for Texas in 2014 (and)
- 3.2% change in incidence.

QA in TB Surveillance

- Surveillance involves monitoring the progress of a disease in a community or population
- Data allow TB programs to target resources and interventions that will provide the most impact in eliminating TB
- Surveillance data are essential in describing morbidity and mortality, monitoring trends in TB incidence and prevalence, detecting potential outbreaks, and defining high-risk groups
- In addition, TB data are needed to evaluate TB control programs, identify deficiencies, and allocate resources
- In order to perform these important functions, it is essential that surveillance data be collected and reported in a accurate, complete and timely manner

How can this be accomplished?

There are five components to the quality assurance process:

- Case Detection
- Accuracy
- Completeness
- Timeliness (and)
- Security and confidentiality (or)

DACTS

What was then, What is Now

- Electronic reporting to the CDC first became available in 1983
- Since then, reporting forms have been revised periodically as the epidemiology of TB in the United States changes
- In 2009, CDC realized there was a need for a standardized reporting process that jurisdictions could adapt to their individual settings
- This was based on concerns regarding the lack of data validation of some state systems and some challenges with electronic data submission
- Therefore, a training team developed innovative strategies for providing standardized methodologies, skills, and tools to enhance the capacity for conducting QA.

TB-410 Form, 1 page, 4 x 5.5

	Patient Status Case or Suspect Preventive TreatmentOther
The state of the s	TMENT OF HEALTH
	uberculosis Services tient Services Report
e de la companya de	n Physician Visit)
Social Security No	Visit Date/
•	Month Day Year
Name Last First Middle	Clinic
Birthdate//	County of Residence
Month Day Year	
Check the section(s) for addition or change:	
☐ Diagnosis ☐ Identification	•
☐ Recommendations ☐ X-Ray	•
Items (s) to be changed <u>From</u> :	<u>To</u> :
1	
2	
3	
5	
Record Closure:	
1. Completed Adequate Therapy 4. Refused Supervi	sion 7. Moved Out of State
	Longer Needed 8. Drug Reaction
3. Lost, Unable to Locate 6. Died	
TB-410, 1-1-80 Physician	Signature

RVCT Forms: Report of Verified Case of TB

■ RVCT, 3 pages

► FU-1, 1 page

► FU-2, 2 pages

Form went from ½ sheet to 6 full pages of data reporting variables What data are collected, analyzed, interpreted, and disseminated? There are 49 variables that fulfill reporting laws and conditions, and administrative codes; They consist of 3 reports on the RVCT.

RVCT

- Demographics
- Clinical
- Radiology
- Bacteriology
- Therapy
- Risks

Follow up 1

- Genotype Accession Information
- Initial susceptibilities

Follow up 2

Case Completion; sputum conversion, move, DOT, completion of adequate therapy, follow up susceptibilities

Significance of Data - Demographics

- Reporting Address...determines the county that will count the case as part of their incidence; by verifying the address, it can also determine if patient was diagnosed in a correctional or long term facility
- Previous diagnosis of TB disease...may be used to explain findings on chest x-ray, treatment failure, different strain of TB
- Date of birth...determines dosage and length of therapy, reaction to TST, age group
- Sex...may support decision to exclude contra-indicative drugs, explain BCG induced TB due to cancer of the bladder; used to identify patient
- Race and Ethnicity...determines risk; used to identify patient
- Country of birth...determines if foreign born, or from a high incidence country
- Month-Year arrived in US...determines if recent arrival; how long in the states or if patient is a border crosser

- Clinical: Radiology, Therapy

- Site of disease...used to ensure pulmonary disease was ruled out; if specimens obtained concur with different sites
- Sputum smear...determines infectiousness of patient and length of exposure
- Initial chest radiograph...determines if pulmonary disease was ruled out;
 used to compare with follow up x-ray; determines infectiousness (cavities)
- Tuberculin (Mantoux) Sin Test at DX...may help determine suspicion of TB disease; used to meet criteria for clinical case if not lab confirmed
- Interferon Gamma Release Assay for M.tb at DX...used to meet criteria for clinical case if not lab confirmed; may be used to diagnosis M.avium
- Date therapy started...determines length of infectiousness
- Initial Drug regimen...determines if standard 4-drug regimen was started

- Clinical: High Risk Factors

- HIV Status at Time of DX...may explain reason for normal chest x-ray; extrapulmonary disease; length of therapy; immune response
- Homeless within past year...may explain why there are no family members listed as contacts
- Resident of correctional or long term care facility at time of DX...determines priority of CI; possibility of additional CI for previous home address or work
- Primary occupation within past year...determines if associated with coworkers
- Injecting drug use within past year...sharing of needles; safety of outreach workers
- Non-injecting drug use within past year...ability to self medicate; safety of outreach workers
- Alcohol abuse...ability to self medicate; safety of outreach workers
- Additional risk factors...contact to an MDR case, incomplete LTBI treatment, received solid organ transplant, diabetes, renal disease

Follow up 2 – Case Completion

- Sputum culture conversion...determines if patient still infectious
- Moved...may explain interruption in therapy
- Date therapy stopped...determines if completed adequately
- Directly observed therapy (DOT)...may explain why patient relapsed
- Final Drug Susceptibility results...determines if patient is still susceptible to TB drugs or acquired drug resistance

Case Registry Activities Recap:

- Process and manage data for cases, suspects, contacts, other LTBI's from targeted testing interjurisdictional referrals (IJN's)
- Verify address; a case is counted in their county of residence when they are first suspected or initially diagnosed with active TB disease, regardless where the patient was actually diagnosed or is being treated or conducted a contact investigation
- Verify case criteria; lab confirmed, clinical, clinical by provider diagnosis
- Ensure suspect record criteria is met
- Collect minimum data required; Interpret data and complete RVCT
- Request additional missing data; 100% completion rate
- Investigate unreported lab confirmed cases or other sources
- Ensure a report of contacts is submitted for every case; priority is given to sputum smear positive cases: check at least 3 contacts were evaluated, and two interviews were conducted
- Interact with other DSHS programs and outside entities who routinely report
- Provide training on case registry activities and reporting; coordinate activities for Quality Assurance; ensure state and national reporting objectives are met
- Maintain records inventory in accordance to retention schedule; adhere to confidentiality and security guidelines.

Count Status

Countable	Not Countable
Patient is a resident of Texas at time of DX.	Patient is a resident of California at time of DX and then moves to Texas.
Patient is a Mexican national who resides in MX but is employed in Texas; is diagnosed and treated in Texas.	Patient is a Texas resident who in diagnosed while incarcerated in a Mexican prison never to return to Texas.
Patient has been residing in Texas for years but chooses to go see a doctor in Mexico; eventually gets diagnosed in MX.	Patient is a Mexican national who comes to Texas and is diagnosed with TB and then referred to a binational program.
Patient has family on both sides of the Texas-Mexico border, two residences, but gets diagnosed in Texas and is being treated in Texas for at least 90 days.	Patient has family on both sides of the Texas-Mexico border, two residences, but gets diagnosed in MX and is being treated in MX for at least 90 days.
Patient is a recent arrival to Texas or the U.S. and has been in the states for at least 90 days.	Patient is a recent arrival to Texas or the U.S. and gets diagnosed in Texas but returns to his native country less than 90 days.
Patient is in ICE custody has been in the	Patient is in ICE custody has been in the

Minimum Data Required on Initial RVCT Goal: Report within 24 hours to CDC

- Name
- Date of birth
- SSN
- Verified address
- Sex, Race and Ethnicity
- Country of Origin, If Not U.S.; date of arrival to U.S.
- HIV Status

Most Common Error and Consequences

At the top of our list is not obtaining or reporting a patient's <u>country of origin</u>; and if patient is from a foreign country, not obtaining or reporting the <u>date of entry into the U.S.</u> Consequences may create the following

- Not being able to determine count status without country of origin
- Your case counts affect the TB funding formula
- If culture positive; this creates a delinquency for the TB Geno-type accession number
- If a pulmonary or other high priority case for a contact investigation; it may further the delay of identifying and evaluating true or missing contacts to an identified case of TB; contacts cannot be linked

Second Most Common Error

The second most common error is interpreting skin test results. The most important consequence would be

- A contact failed to be evaluated because first test result was negative
- Second round testing was not done
- Screening of symptoms was not performed
- A potential new case was overlooked

5 or more millimeters	10 or more millimeters	15 or more millimeter
An induration of 5mm or more is considered positive for	An induration of 10mm or more is considered positive for	An induration of 15mm or more is considered positive for
 Patients living with HIV Recent contacts of patients with infectious TB Patients who have previously had TB disease Patients with organ transplants and other immunosuppressed patients (including patients taking a prolonged course of oral or intravenous corticosteroids or TNF-antagonists) 	 Patients who have come to the U.S. within the last 5 years from areas of the world where TB is common Patients who inject illegal drugs Mycobacteriology lab workers Patients who live or work in high-risk congregate settings Patients with certain medical conditions that place them at high risk for TB Children younger than 4 years Infants, children, and adolescents exposed to adults in high-risk categories 	Patients with no known risk factors for TB

Interpreting the TST Reaction

What have we Learned Today?

Let's find out by working on a little group activity

Answers will be provided for you to take with you

■ What is your role in all of this?

- How is TB spread?
- **■** Answer:

- How many TB cases were reported in 2015?
- **■** Answer:

- What is DACTS?
- **►** Answer:

- What does RVCT stand for?
- **■** Answer:

A case was reported to the local health department.

- Patient's name: Tom Groovy Jones
- Date of Birth: 05.10.48
- SSN: left blank
- Verified address: P O Box 1010, Hollywood California
- Sex, Race, Ethnicity: Male, White, Non-Hispanic
- Country of Origin: left blank
- HIV Status: negative 10 years ago

Question: What information is missing in order for DSHS to report to CDC?

Answer:

- Mr. Jones had a positive NAAT collected on 03.15.2016 that was positive for M.tb complex and a week later a sputum smear and culture positive for M.tb was reported. No coughing was reported but he did experience some weight loss.
- Question: Is Mr. Jones a lab confirmed case? A clinical case? Or a clinical case by provider diagnosis?
- Answer:
- Question: Mr. Jones only named one contact; is this an adequate contact investigation?
- Answer:

Bonifacio is a Mexican national who works at a plant in Brownsville across the Mexican border. He has a wife and family in Mexico and another family in Brownsville. He presents himself with his family from Brownsville at the Brownsville clinic. Brownsville immediately conducts a contact investigation. In the meantime, we receive an ELR indicating his resides in Mexico.

- Question: Should Bonifacio be counted as a case for Cameron County or not?
- Answer:

Jose Soledad was picked up by the Border Patrol in Eagle Pass and processed at the ICE Detention Center. He has been crossing the border for the past 10 years. Jose Soledad is diagnosed with TB in Eagle Pass and takes 2 months of therapy before he is deported.

- Question: Should the case be counted for Maverick county or not?
- Answer:

Question 9:

- Aarav is from India and works for Exxon Mobile on a carrier ship. They dwell in the ship itself and never leave the Port of Houston. He starts feeling ill and is taken to a hospital in Houston where he is diagnosed with TB. He is hospitalized for 45 days and then goes back to India to recuperate some more.
- Question: Should this case count for Texas or India? What should be his address?
- Answer:

Question 10:

Melody is a contact to an infectious case and her TST is interpreted as 5 MM.

- Question: Is this reading positive or negative?
- Answer:

Steven is going to college and needs a TST done because he's traveled to Central and South America doing volunteer work. His TST is interpreted as 10 MM.

- Question: is this reading positive or negative?
- Answer:

Byron is a football athlete and needs a TST done because he is going to start taking a steroid for this asthma. His TST is interpreted as 12 MM.

- Question: is this reading positive or negative?
- Answer:

Mei-Ling has been working at a home for the elderly coordinating card and bingo games and cooking demonstrations. A signs, symptoms and risk assessment was done and none were reported. Her TST was interpreted as 14 MM.

- Question: is this reading positive or negative?
- Answer:

Adequate resources must be available in order for health officials to achieve the ultimate goal of eliminating TB.

Adequate Infrastructure:

- Qualified, trained, and motivated staff
- Community and congregate setting partnerships
- Policies, procedures and guidelines
- Ongoing data collection, monitoring, and reporting systems
- Adequate physical, diagnostic, treatment, field investigations and case management resources
- Linkages between jurisdictions
- Adequate data collection tools
- Legal authority to ensure adherence to treatment

Who is Responsible?

- Private providers?
- Local health departments?
- Case registry staff?
- Outreach workers?
- Nurses?
- Program managers?
- Binational programs?
- Correctional systems?
- Regional offices?
- Central office?
- CDCs
- World Health Organization? (or)
- All of the above?

Long-Term Outcomes

- Patient completed treatment on time
- Prevented patient from drug resistance
- Patient was cured
- Quality of life for patient was improved
- There was a reduction in transmission of TB
- Incidence rate for TB in Texas was reduced
- TB is eliminated!

In the End

Who do we <u>ultimately</u> work for? Your local health department? The state? The nation? Your friends and family? Or the entire world?

Answer: Our patients!

In Conclusion:

- TB Programs must continue to report consistent, complete and accurate data in a timely manner
- Only then can WE begin to imagine the end of tuberculosis, as quoted by the assistant administrator for global health at USAID
- If we all work together.

Resources:

http://www.usnews.com/news/articles/2015/10/28/tuberculosis-passes-hiv-as-no-1-infectious-disease http://www.cdc.gov/tb/statistics/reports/2014/pdfs/tb-surveillance-2014

Quality Assurance for Tuberculosis Surveillance, A Guide and Toolkit 2013 Manual National Tuberculosis Indicators Project (NTIP) User Guide 2015

Thank you!

On behalf of myself and Jonathon Poe, our Branch Manager for TB/HIV/STD Epi & Surveillance

- Justin Irving, Data and Reporting Manager
- Miranda Leathers Fanning, Group Manager for TB/HIV/STD Epi and Surveillance

Team Members:

- Shawna Tilley, Senior Case Consultant
- Benedicta Anikputa, IJN Coordinator/Case Consultant
- Lauren De la Parte, Case Consultant
- Daniel Castillo, Case Consultant
- Sima Vafaee (Contacts)
- Laurie Rosenbluth, Epidemiologist
- Barbara Scaife, Contractor
- Ayanna Ransom, Assistant
- Amy Cochran, Assistant